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(54) Squeegee with pad

(57) A window-cleaning squeegee comprises a sponge-action pad (11) bonded to a mounting bar (12) provided with clips (14) for attaching the bar to the blade-holding head (13) of the squeegee. The window-contacting surface of the pad is covered with a membrane (15) through which cleaning liquid can permeate.

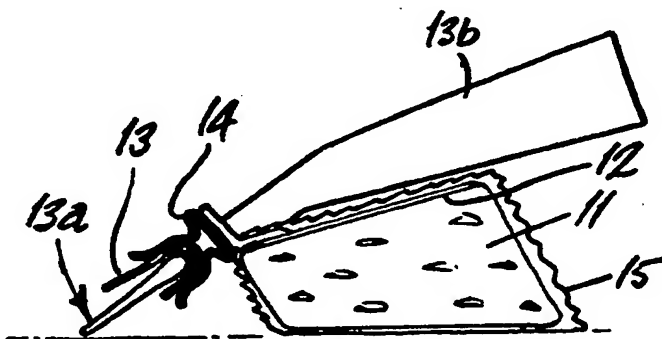


FIGURE 3

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FIGURE 1

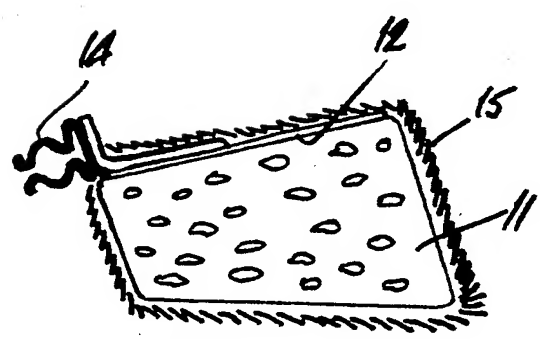
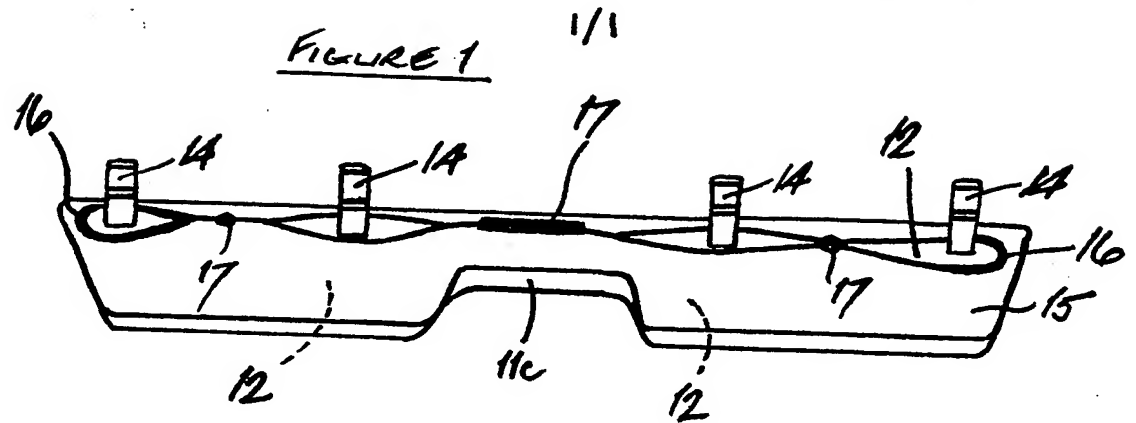


FIGURE 2

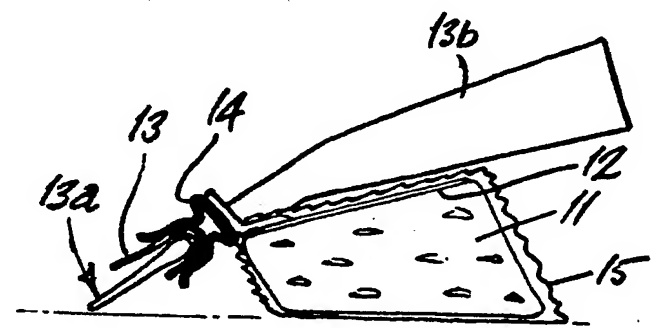


FIGURE 3

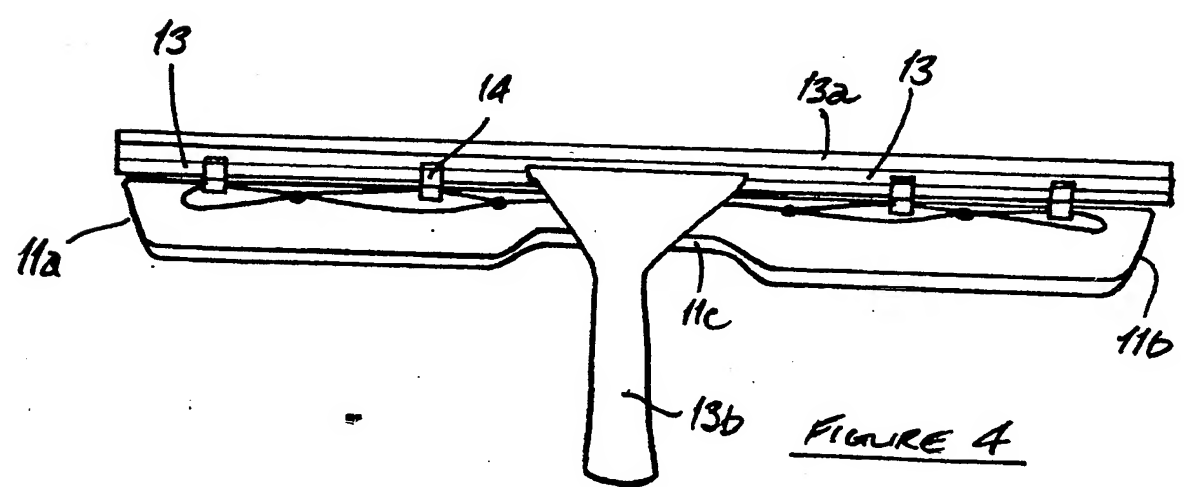


FIGURE 4

## SPECIFICATION

**Squeegee with fluid-carrying pad**

5 The invention relates to handled blades which are conveniently used to wipe windows dry and which are popularly known as squeegees.

Conventional window-wiping squeegees consist of an elongate rubber blade carried at one end of a handle and running at right angles to the handle axis. If a window surface has first been wetted with window-cleaning fluid the squeegee blade can be drawn across the surface and will wipe the film of fluid down to the bottom of the window in much the same way as a vehicle windscreen-wiping blade. The fluid which is wiped to the bottom of the window can then either drain off the window frame, or can be wiped up with a cloth or wash leather. Any film of fluid left on the window surface by the blade is so thin that it will quickly evaporate, and the window surface is left dry and clean.

UK patent specification number 1 389 390 shows a squeegee of known kind.

Window-wiping squeegees are now widely used by professional window cleaners as well as by domestic householders. They have largely replaced the traditional wash leather. Like the wash leather, however, they can only be used to wipe a previously-wetted window surface. They have to be used alternately with a sponge or other window-wetting means.

Attempts have been made to combine the conventional window-wiping squeegee with a sponge-action pad, fixed to the squeegee head, the idea being that the pad can be charged with fluid and drawn across the window to wet the window surface, and the squeegee head can be manipulated to bring the blade into contact with the window surface to wipe the fluid away. Some of these combined "blade-sponge" window cleaners incorporate means to feed a continuing supply of water to the "sponge" (usually a synthetic foam plastics pad) on the squeegee head.

These known blade-and-sponge devices have, however, several drawbacks. The sponge adds to the weight of the head, and the presence of the sponge on the head adds to the distance between the blade and the user's wrist, making the device tiring to use. The sponge and blade are usually designed and positioned on opposite sides of the head and are intended to be used one after another, rather than together, so saving no time over the conventional separate sponge and squeegee. Even when the sponge and blade are on the same side of the head, they are usually spaced a relatively large distance from one another, making it difficult to flatten them simultaneously and accurately against the window surface in a single wiping movement. Also, the sponge, once charged with fluid, usually discharges most of its fluid at an uncontrolled rate, with no facility to meter out a steady discharge over several passes across the window surface. Again, a sponge pad will tend to scratch any grit over the window surface, especially if a synthetic so-called sponge is used and will tend to disintegrate in use.

The invention seeks to combine a window-wetting pad with a window-wiping squeegee blade whilst overcoming the drawbacks just outlined.

According to one broad aspect of the invention, a window-cleaning squeegee carries an elongate sponge-action pad which extends behind the back face of the squeegee blade, which is spaced from the back face of the blade by an amount which is minor in relation to the length of the blade-carrying handle, and which is so positioned that, in use, the fluid-charged pad and the blade can be drawn over the window together to cause the pad to wet the window surface, and the blade to wipe that pad-wetted surface, in one stroke of the squeegee; the pad is fixed to the squeegee head by means which, in use will cause a movement of the head towards the window surface to compress the pad against the window; and the pad is covered, at least over its window-contacting surface, by a membrane through the window-wetting fluid can permeate.

The ability to use pad and blade together in a single wetting-wiping strike reduces drastically the time taken to clean windows.

By positioning the pad close behind the blade, the user's hand can still be brought up close to the squeegee head, and so the wrist effort needed to manipulate pad and blade together in use is minimised. Also, the window-cleaning fluid deposited by the pad in use has little time to spread beyond the blade-ends before the blade wipes the fluid from the window surface.

Streaks are then less likely to be left to dry on the window or to need wiping away by a further stroke of the squeegee blade.

By controlling the movement of the squeegee head towards and away from the window surface, the user can vary the discharge of window-wetting fluid from the pad, to suit given cleaning needs. For example, a merely dusty window may require less wetting than a really dirty one. This ability to control fluid discharge from the pad can enable the user to dispense with the potentially dangerous practice of carrying his bucket of fluid with him up ladders. A single dip of the pad into the bucket, on the ground, may suffice until he descends again.

The fluid-porous membrane may be a wash leather, for example, or it may be a material such as lambswool, towelling, or cotton sheeting. The membrane aids the retention of fluid within the pad, so that the pad has to be recharged with fluid less often.

A suitably chosen membrane material can also reduce any tendency to scratch grit across the window surface, by absorbing the grit, rather than pulling it across the window surface as an uncovered sponge pad would normally do. The cover also largely prevents the pad from disintegrating, so the pad lasts longer.

The examples of membrane material just outlined are themselves fluid-absorbent, but this is not essential within the broad inventive concept.

The covering membrane may be designed to be removable from the pad and to be replaceable by

The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.

another membrane. Different membranes can then be chosen for differing window surfaces. Worn or soiled covering membranes can be discarded and replaced with new ones without the entire pad having to be replaced.

Preferably the opposite ends of the pad are angled or curved in towards one another, in the direction of the end of the squeegee handle, thus making it easier for the user to wipe around corners.

Preferably also the mid-length region of the pad is recessed to enable the user to bring his hand well up towards the head of the squeegee. Such a recess, accommodating the user's fingers and/or thumb, reduces still further the effort needed to manipulate the squeegee.

Conveniently the pad is trapezoidal in cross-section. Such a pad combines a sizable fluid-carrying volume with a readily-compressed shape.

In practical embodiments of the invention, the pad will normally be substantially the same length as, but in fact slightly shorter than, the blade, with the blade extending beyond the pad by a relatively small amount at each of its opposite ends. The pad is highly unlikely ever to extend beyond the blade-ends.

The pad and its covering membrane are an essential element of a squeegee-and-pad embodying the invention, and are intended to be protected as such by this application. Indeed, the pad and membrane may advantageously be designed to be readily detachable from the squeegee, so that pads and covers (membranes) can be made and sold as a unit for attachment to otherwise conventional squeegees. The pad could for example incorporate clips which, in use, constitute the required means fixing the pad to the squeegee head, and the clips could be fixed to a bar which carries the pad and which thus moves with the head to compress the pad against the window in use.

In another broad aspect of the invention, therefore, an elongate sponge-action pad intended for use, or suitable for use, with a window-cleaning squeegee is covered, at least over its window-contacting surface, by a membrane through which the window-wetting fluid can permeate, and is bonded to an elongate mounting bar which extends along a non-window-contacting surface of the pad and which carries clips or other means to fix the pad to the squeegee head in use behind the back face of the squeegee blade with the pad then spaced from the back face of the blade by an amount which is minor in relation to the length of the blade-carrying handle and so that the fluid-charged pad and the blade can be drawn over the window together to cause the pad to wet the window surface, and the blade to wipe that pad-wetted surface, in one stroke of the squeegee; and with the bar moving with the squeegee head so that a movement of the head towards the window surface can compress the pad against the window in use.

Such a pad and cover can exhibit any of the additional features previously referred to when outlining the different forms which the squeegee-and-pad combination might take.

One squeegee with removable pad embodying the invention is shown in the accompanying drawings, and will now be described with reference to those drawings. It is only an example of forms which the

invention might take. It is the best form currently known to the applicant of putting the invention into practice.

In the drawings:

Figure 1 shows the window-wetting pad in plan; Figure 2 shows the pad of Figure 1 in cross-section; Figure 3, again drawn in cross-section, shows the pad fitted to the head of an otherwise conventional window-wiping squeegee; and

Figure 4 shows the pad-carrying squeegee of Figure 3 in plan.

The pad of Figures 1 and 2 comprises a sponge-action cellular foam plastics pad 11 bonded to an elongate rectangular and relatively rigid plastics mounting bar 12. The foam sponge-action pad 11 is trapezoidal in cross-section. The rigid rectangular flat plastics mounting bar 12 extends along the whole of one rectangular surface of the pad 11. Although the cellular foam pad 11 has a sponge-like action, it is not, of course, literally a natural sponge, although there is nothing to prevent natural sponges being used in a squeegee and pad embodying the invention.

The pad 11 is attached to the blade-holding head 13 of an otherwise conventional squeegee by means of spring clips 14 which are riveted or screwed onto, or moulded integrally with, raised reinforced areas spaced along the plastics mounting bar 12. The clips 14, in use, grip the squeegee head 13 to fix the pad 11 and its plastics mounting bar 12 rigidly but detachably onto the head 13 some short distance behind the back face of the squeegee blade 13a.

When the head 13 moves, the clips 14 move with it: they cannot swivel about the head to any appreciable extent.

A covering membrane 15 of water-absorbent and porous fibrous towelling material is elasticated in the hem 16 at each of its opposite ends, allowing it to be pulled onto and over the pad 11 and clipped together at points 17 between the raised reinforced clip-carrying areas of the plastics mounting bar 12. The cover 15 can be clipped at points 17 by press-studs, by VELCRO fasteners, or by other suitable means. When in position, as shown in Figures 3 and 4, the cover 15 stretches firmly over the window-contacting surface of the foam pad 11. It can be unclipped and taken off the pad after use, to be cleaned, or to be replaced with another cover.

The ends 11a, 11b of the pad are angled towards one another, and the pad is recessed at 11c in its mid-length region. The cover 15 is shaped and/or stretch-fitted accordingly.

In use, the pad with its cover in place is clipped to the squeegee which is then dipped into a bucket of window-cleaning fluid to prime the pad. As the squeegee is subsequently drawn across the window surface, a user pressing the squeegee handle 13b towards the window surface can cause the plastics mounting bar 12 to move with the handle and head 13 and so to squeeze the foam pad. This transfers fluid from the pad 11 through the towelling cover 15 onto the window surface. The wetted window surface is then wiped by the blade 13a which follows the pad 11 down the window, in the same stroke of the squeegee.

When the pad has discharged all its fluid, it can be recharged by simply dipping it into the bucket of

solution (without necessarily having to remove the cover 15) and then replacing the window-cleaning operation as outlined above.

Although a plastics mounting bar 12 has been described and illustrated, aluminium or other suitable lightweight and preferably non-corrosive material could be used.

In Figure 3, the trapezoidal-section pad has proportions of 1 (blade-adjacent face) to 1.5 (bar-contacting face) to 2 (back face).

In Figure 4, the depth of the recess 11c is just over half the width of the bar-contacting face of the pad 11; and the length of the recess along the pad is just under one-third the pad length, distributed equally each side of the pad mid-length point.

#### CLAIMS

1. A window cleaning squeegee carrying an elongate sponge-action pad which extends behind the back face of the squeegee blade, which is spaced from the back face of the blade by an amount which is minor in relation to the length of the blade-carrying handle, and which is so positioned that, in use, the fluid-charged pad and the blade can be drawn over the window together to cause the pad to wet the window surface, and the blade to wipe that pad-wetted surface, in one stroke of the squeegee; the pad being fixed to the squeegee head by means which, in use, will cause a movement of the head towards the window surface to compress the pad against the window; and the pad being covered, at least over its window-connecting surface, by a membrane through which the window-wetting fluid can permeate.
2. A squeegee according to Claim 1 and in which the fluid-porous membrane is also fluid-absorbent.
3. A squeegee according to Claim 1 or Claim 2 and in which the membrane is removable from the pad.
4. A squeegee according to any of the preceding Claims and in which the opposite ends of the pad are angled or curved in towards one another, in the direction of the end of the squeegee handle.
5. A squeegee according to any of the preceding Claims and in which the mid-length region of the pad is recessed to enable a user to bring his hand closer towards the head of the squeegee.
6. A squeegee according to any of the preceding Claims and in which the pad is trapezoidal in cross-section.
7. A squeegee substantially as described herein with reference to, and as illustrated in, the accompanying drawings.
8. An elongate sponge-action pad intended for use, or suitable for use, with a window-cleaning squeegee, the pad being covered, at least over its window-contacting surface, by a membrane through which the window-wetting fluid can permeate, the pad being bonded to an elongate mounting bar which extends along a non-window-contacting surface of the pad and which carries clips or other means to fix the pad to the squeegee head in use behind the back face of the squeegee blade with the pad then spaced from the back face of the blade by an amount which is minor in relation to the length of the blade-carrying handle and so that the fluid-charged pad and the blade can be drawn over the window together to cause the

pad to wet the window surface, and the blade to wipe that pad-wetted surface, in one stroke of the squeegee; and with the bar moving with the squeegee head so that a movement of the head towards the window surface can compress the pad against the window in use.

9. A pad according to Claim 8 and having the features set out in any one of Claims 2 to 6.

10. A pad-and-membrane substantially as described herein with reference to and as illustrated in the accompanying drawings.

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